

10/514 429

DT15 Rec'd PCT/PTO 1.6 NOV 2004

Atty. Docket No.: 20455-20338.00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:  
Robert DWILINSKI et al.

Serial No.: Not yet assigned

Filing Date: Concurrently herewith

For: PHOSPHOR SINGLE CRYSTAL  
SUBSTRATE AND METHOD FOR  
PREPARING THE SAME, AND  
NITRIDE SEMICONDUCTOR DEVICE  
USING THE SAME

Examiner: Not Yet Assigned

Group Art Unit: N/A

**INFORMATION DISCLOSURE  
STATEMENT UNDER 37 C.F.R. § 1.97 & 1.98**

MS Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Dear Sir:

Pursuant to 37 C.F.R. §1.97 and § 1.98, Applicants submit for consideration in the above-identified application the documents listed on the attached Form PTO/SB/08a/b. Copies of foreign documents and non-patent literature are submitted herewith. The Examiner is requested to make these documents of record.

Application No.: Not yet assigned

Atty. Docket No. 20455-20338.00

The documents listed on the attached Form PTO/SB/08a/b were cited in an International Search Report mailed February 18, 2003, issued in PCT/IB02/04441; an International Search Report mailed February 18, 2003, issued in PCT/JP02/11136; an International Search Report mailed February 19, 2003, issued in PCT/IB02/04185; an International Search Report mailed April 8, 2003, issued in PCT/JP02/12969; an International Search Report mailed April 8, 2003, issued in PCT/JP02/13079; an International Search Report mailed April 8, 2003, issued in PCT/JP02/12956; an International Search Report mailed April 16, 2003, issued in PCT/PL02/00077; a Preliminary Notice of Rejection of the IPO dated February 2, 2004, issued in Taiwan Patent Application No. 091110622; a Preliminary Examination Report mailed February 10, 2004, issued in PCT/JP02/11136; a Preliminary Notice of Rejection of the IPO dated August 30, 2004, issued in Taiwan Patent Application No. 091125039; a Notice of References Cited issued in U.S. Application No. 10/147,319; and a Notice of References Cited issued in U.S. Application No. 10/147,318 (copy attached).

This Information Disclosure Statement is submitted:

☒ With the application; accordingly, no fee or separate requirements are required.

Applicants would appreciate the Examiner initialing and returning the Form PTO/SB/08a/b, indicating that the information has been considered and made of record herein.

The information contained in this Information Disclosure Statement under 37 C.F.R. § 1.97 and § 1.98 is not to be construed as a representation that: (i) a complete search has been made; (ii) additional information material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the above information constitutes prior art to the subject invention.

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Application No.: Not yet assigned

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In the unlikely event that the transmittal form is separated from this document and the Patent Office determines that an extension and/or other relief (such as payment of a fee under 37 C.F.R. § 1.17 (p)) is required, Applicants petitions for any required relief including extensions of time and authorize the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing 204552033800.

Dated: November 16, 2004

Respectfully submitted,

By 

Barry E. Bretschneider

Registration No.: 28,055

MORRISON & FOERSTER LLP

1650 Tysons Blvd, Suite 300

McLean, Virginia 22102

(703) 760-7743

Substitute for form 1449/PTO			<b>Complete if Known</b>		
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (Use as many sheets as necessary)			Application Number	Not yet assigned 10/514429	
			Filing Date	Concurrently herewith	
			First Named Inventor	Robert DWILINSKI	
			Art Unit	N/A	
			Examiner Name	Not Yet Assigned	
Sheet	1	of	2	Attorney Docket Number	204552033800

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1.	US-5,928,421	07-27-1999	Yuri et al.	
	2.	US-6,156,581	12-05-2000	Vaudo et al.	
	3.	US-2001-0008656-A1	07-19-2001	Tischler et al.	
	4.	US-2001-0022154-A1	09-20-2001	Cho et al.	
	5.	US-6,372,041-B1	04-16-2002	Cho et al.	
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	9.	US-5,456,204	10-10-1995	Dimitrov et al.	
	10.	US-6,177,057-B1	01-23-2001	Purdy	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)				
	11.	WO-01-024921-A1	04-12-2001			X
	12.	EP-1088914-A1	04-04-2001			X
	13.	EP-0711853-B1	05-15-1996			X
	14.	JP-10-70079-A	03-10-1998		English abstract	X
	15.	JP-8-250802	09-27-1996		English abstract	X
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	17.	JP-11-54847	02-26-1999		English abstract	X
	18.	JP-2000-82863	03-21-2000		English abstract	X
	19.	JP-10-70338	03-10-1998		English abstract	X
	20.	JP-10-7496	01-13-1998		English abstract	X
	21.	JP-2000-216494	08-04-2000		English abstract	X
	22.	JP-2001-342100	12-11-2001		English abstract	X
	23.	GB-2326160-A	12-16-1998		English abstract	X
	24.	GB-2333521-A	07-28-1999		English abstract	X
	25.	WO-98-55671	12-10-1998			X
	26.	JP-9-134878	05-20-1997		English abstract	X
	27.	FR-2796657-A1	01-26-2001			X
	28.	WO-01-24284-A1	04-05-2001			X
	29.	JP-11-307813	11-05-1999		English abstract	X

\*EXAMINER: Initial if information considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Examiner Signature		Date Considered	
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NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	30.	Xiang-jun Mao et al. (2000). "New Concept Technology Pressure-Variation Liquid Phase Epitaxy," SPIE Photonics Taiwan Conference Proceedings July 2000: 12 pages	
	31.	Yu Melnik et al. (1998). "Properties of Free-Standing GaN Bulk Crystals Grown by HVPE," Mat. Res. Soc. Symp. Proc. Vol. 482: Pages 269-274.	
	32.	C.M. Balkas et al. (1997). "Growth of Bulk AlN and GaN Single Crystals by Sublimation," Mat. Res. Soc. Symp. Proc. Vol 449: Pages 41-46	
	33.	Sylwester Porowski. (1998). "Bulk and Homoepitaxial GaN-Growth and Characterisation," Journal of Crystal Growth Vol. 189/190: Pages 153-158	
	34.	Hisanori Yamane et al. (1998). "Polarity of GaN Single Crystals Prepared with Na Flux," Jpn. J. Appl. Phys. Vol. 37: Pages 3436-3440	
	35.	Masato Aoki et al. (2000). "Growth of GaN Single Crystals from a Na-Ga Melt at 750°C and 5MPa of N <sub>2</sub> ," Journal of Crystal Growth Vol 218: Pages 7-12	
	36.	R. Dwilinski et al. (1998). "AMMONO Method of BN, AlN and GaN Synthesis and Crystal Growth," MRS Internet Journal Nitride Semiconductor Research 3, 25: 4 Pages	
	37.	Masaichi Yano et al. (1999). "Control of Nucleation Site and Growth Orientation of Bulk GaN Crystals," Jpn. J. Appl. Phys. Vol. 38, Pt. 2, No. 10A: Pages L1121-L1123	
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	39.	R. Dwilinski et al. (1997). "Exciton Photo-Luminescence of GaN Bulk Crystals Grown by the AMMONO Method," Materials Science and Engineering B50: Pages 46-49	
	40.	Douglas R. Ketchum et al. (2001). "Crystal Growth of Gallium Nitride in Supercritical Ammonia," Journal of Crystal Growth Vol. 222: Pages 431-434	
	41.	R. Dwilinski et al. (1996). "On GaN Crystallization by Ammonothermal Method," Vol. 90, No. 4: Pages 763-766	
	42.	K. Pakula et al. (1995). "Growth of GaN Metalorganic Chemical Vapour Deposition Layers on GaN Single Crystals," ACTA PHYSICA POLONICA A Vol 88: Pages 861-864	
	43.	M. Palczewska et al. (1998). "Paramagnetic Defects in GaN," MRS Internet Journal Nitride Semiconductor Research 3, 45	
	44.	Izabella Grzegory (2001). "High Pressure Growth of Bulk GaN from Solutions in Gallium," Journal of Phys. Condens. Matter Vol. 13: Pages 6875-6892	
	45.	O. Oda et al. (2000). "GaN Bulk Substrates for GaN Based LEDs and LDs," Phys. Stat. Sol. Vol 180: Pages 51-58	
	46.	Akito Kuramata et al. (1996). "Substrates for III-V Nitride Semiconductors," Oyo Buturi Vol. 65, No. 9: Pages 936-940	

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